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Sputnik, Cold War Nostalgia, and 9/11: The Lessons of Sputnik post-9/11

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Abstract
It is not an anniversary we usually celebrate and it was not any fun for the United States at the time. Fifty years ago today, on the night of October 4, 1957, a 22-inch aluminum ball, primitive by today's standards, sent the American public, and the policy and scientific elite, into high crisis.[1]

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Sputnik, Cold War Nostalgia, and 9/11

The lessons of Sputnik post-9/11

SOURCE: NASA

The harmless 184-pound radio beacon.

By Susan Lindee | **Thursday, October 4th, 2007**

It is not an anniversary we usually celebrate and it was not any fun for the United States at the time. Fifty years ago today, on the night of October 4, 1957, a 22-inch aluminum ball, primitive by today's standards, sent the American public, and the policy and scientific elite, into high crisis.[1]

As they learned of the new Soviet satellite, Americans inside the Beltway and beyond gazed into the sky, trying to catch a glimpse of the little machine. Lyndon Johnson, then Senate Majority leader, was hosting a barbecue on his ranch in the Texas Hill Country, and as he and his guests looked skyward he recalled "profound shock" at a cosmos that now felt "alien."[2]

In many ways, 9/11 was like Sputnik. It was a shocking demonstration of technological vulnerability.On Sputnik Night, as it came to be known, the United States seemed to have only two types of people: those looking up, scanning the sky and those looking down for places to hide.[3] Overnight, in American culture, time came be to be marked as "pre-Sputnik" and "post-Sputnik."

Similarly, the attacks on New York and Washington on 9/11 "changed everything." Commentators frequently have compared the 2001 attacks to the Japanese bombardment on naval vessels (mostly rusty dreadnoughts built in the first wave of an earlier arms race) moored at Pearl Harbor in December 1941. This is a legitimate, if imperfect, comparison. But in many ways, 9/11 was more like Sputnik.[4] It was a shocking demonstration of technological vulnerability.

As the NASA historian Roger Launius has cogently suggested, Sputnik I was in fact not the least bit terrifying or dangerous. Launched from the Soviet Union's rocket testing facility in the desert near Tyuratam in the Kazakh Republic, it had four antennae, weighed 183 pounds, and carried a small radio beacon that beeped. It circled the earth in an elliptical orbit every 96 minutes. By the time it fell safely to earth in January 1958, however, this harmless little ball had profoundly transformed U.S. political and techno-scientific culture.

To the surprise of Soviet Premier Nikita Khrushchev, who initially viewed the launch as having only limited political significance, American newspaper headlines proclaimed Sputnik a horrifying Soviet triumph. Khrushchev promptly corrected course and began exploiting the delightfully unexpected propaganda potential of space exploration.[5] Sputnik 2, with its living inhabitant, a dog named Laika, was aloft within a month.

Meanwhile, the U.S. effort to launch its own satellite in December 1957 was a dismal, embarrassing, public failure. The Vanguard Rocket lifted briefly from the launchpad at Cape Canaveral, as hundreds of reporters watched, and then exploded. It was not until January 1958 that the United States successfully launched its first satellite, Explorer I.

Sputnik jump-started some of the most paranoid excesses of the Cold War and threatened the image of the United States around the world. Enemies and rivals were gleeful at the humiliation of the hegemon.[6] Allies were frightened and in need of reassurance. In that bleak fall, the nation that first built atomic weaponry began to seriously contemplate the prospect of nuclear blowback and technological inferiority in a new, urgent "space race."

So today, 50 years on, what's to remember, or to celebrate?

Sputnik, for all its terrifying consequences, became an impetus for national self-doubt, and for a critical examination of science policy and funding, the state of American technology and the resources devoted to primary and secondary school education. It produced a techno-scientific turn, a wave of new initiatives for space, as well as general curricular reform and heightened support of science, technology, and medicine across the board. It led to the creation of the National Aeronautics and Space Administration in July 1958 (after months of debate about how such an agency should be structured) and to a curricular revolution.

The National Science Foundation, facing constant budget cutbacks from an unenthusiastic Congress in the 1950s, suddenly found eager support for a small program intended to improve science teaching in U.S. elementary and high schools. The teaching program budget jumped from $600,000 to $6,000,000, with "Sputnik" the keyword in the hearings.[7] Even the teaching of Darwinian evolution, which had languished for decades in American public schools after the 1925 Scopes monkey trial, became a public priority with the passage of the National Defense Education Act in 1958.[8]

Looking back, the policy and scientific crisis provoked by Sputnik can almost provoke nostalgia for the good old days, when teaching evolutionary theory to eighth graders seemed important to national defense.

Somehow, the most complex security threat the country has ever faced has not produced the broad, comprehensive military, technological, and scientific alliances that grew out of Sputnik.

And how about today? In the bleak fall of 2001, the world's dominant military forces were shown to be inexplicably useless against enemies armed with box cutters and suicidal ideation. All the nuclear weapons in the world could not have prevented the events of that terrible day. 9/11 was therefore, like Sputnik, an opportunity for the United States as a nation to engage in self-doubt.

How could the nation be made more secure? Was more hardware the key? More intelligence? More support for education or international development? And how could experts of all kinds, in medicine, the social sciences, engineering, and the biological and physical sciences, be mobilized to help the United States manage these baffling new forms of violence and aggression?

Instead, an administration that cannot even keep the National Academy of Sciences as an ally has resolutely chosen the opposite of self doubt. An NAS report in 2005 is filled with striking anecdotes that suggest the administration is anti-science.[9] And over the last six years, relations between the administration and leading

scientific organizations have reached an abysmal low. The Union of Concerned Scientists has documented "the Bush Administration's misuse of science."[10] The Federation of American Scientists has angrily responded to the government case against microbiologist Thomas Butler with a call to arms.[11]

Somehow, the most complex security threat the country has ever faced has not produced the broad, comprehensive military, technological, and scientific alliances that grew out of Sputnik. There is today no shortage of federal support for new weapons systems, for the "killing technologies" that the historian David Edgerton suggests have dominated technological innovation for a century.[12] But taking scientific and medical expertise seriously on other issues has been a different matter. The response to Sputnik, sometimes characterized as "hysteria," can look positively enlightened in comparison to the response to 9/11.

History is not, of course, the chronicle of what happened in the past. It is rather the selective reconstruction of what can be remembered, recognized, and understood in one's own time. In 1957, Sputnik seemed so astonishing that it defined a break in the texture of time, from pre to post. It looks like much less to us now. But we can see things about those events that would have been less obvious to participants. We can see, for example, some alternative perspectives on evolving relationships between scientists and the state, relationships that continue to vex us today, and to matter now more than ever.

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Notes

1. Recent scholarly studies of the impact of Sputnik include Asif Siddiqi, *Sputnik and the Soviet Space Challenge*, (Gainesville: University of Florida Press, 2000); Roger D. Launius, John M. Logsdon and Robert W. Smith, eds., *Reconsidering Sputnik: Forty Years Since the Soviet Satellite* (Harwood Academic Publishers, 2000); for an engaging overview of the space program more generally, a popular source is Walter McDougall, *The Heavens and the Earth: A political History of the Space Age* (New York: Basic, 1985).

2. Guests at an International Geophysical Year party at the Soviet Embassy in Washington, D.C. learned that the Soviet News Agency Tass had just announced the launch, and diplomatically, immediately congratulated their Soviet hosts. See description of LBJ at the Pedernales River, and of this party at the embassy, in Roger Launius' account at http://history.nasa.gov/sputnik/sputorig.html.

3. Carla Helfferich proposes this in an essay describing the first U.S. sighting of Sputnik by an Alaskan at the Geophysical Institute in Fairbanks. Available at http://www.gi.alaska.edu/ScienceForum/ASF13/1358.html.

4. The historian Robert H. Zieger has made the same comparison, though he focuses on consumerism as a variable. See Zieger, "Uncle Sam Wants You to Go Shopping: A Consumer Society Responds to National Crisis, 1957-2001," *Canadian Review of American Studies* 34:1 (2004): 83-103.

5. The description of these events is in his son's account of the days immediately after the launch. Sergey Khrushchev, 2000. "The First Earth Satellite: A Retrospective View from the Future." In Launius, Logsdon and Smith, eds., pp. 267-287.
6. John Krige explores how European leaders responded to Sputnik in his "Building a Third Space Power: Western European Reactions to Sputnik at the Dawn of the Space Age." In Launius, Logsdon and Smith, eds., pp. 289-307.

7. See J. Merton England, "The National Science Foundation and Curriculum Reform: A Problem of Stewardship," *The Public Historian* 11(2) (1989): 22-36.

8. See discussion of the development of the Biological Science Curriculum Study, Randy Moore, 2001. "The Lingering Impact of the Scopes Trial on High School Biology Textbooks." *Bioscience* 51 (9) (2001): 790-796.

9. http://www.nap.edu/catalog.php?record_id=11152.

10. http://webexhibits.org/bush/1.html.

11. http://www.fas.org/butler/. See also an excellent report on the Butler case in the Cleveland Plain Dealer at http://www.cleveland.com/plague/.

12. For a daily tally of defense spending, and descriptions of each project, see http://www.militaryindustrialcomplex.com/contracts-by-branch-of-service.asp . See Edgerton's chapter on all forms of killing technologies, a category which for him includes slaughterhouses, pesticides, weapons, and the industrialized killing facilities that were critical to the Holocaust. David Edgerton, T*he Shock of the Old: Technology and Global History Since 1900* (Oxford University Press, 2007) pp 160-183.